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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/669,452	09/24/2003	Mark L. Buer	50493/SDB/B600	4590
23363	7590	05/22/2007		
CHRISTIE, PARKER & HALE, LLP PO BOX 7068 PASADENA, CA 91109-7068			EXAMINER HOMAYOUNMEHR, FARID	
			ART UNIT 2132	PAPER NUMBER
			MAIL DATE 05/22/2007	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

## Office Action Summary

Application No.

10/669,452

Applicant(s)

BUER ET AL.

Examiner

Farid Homayounmehr

Art Unit

2132

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-9 and 12-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-9, 12-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

1. This action is responsive to communications: application, filed 9/24/2003; amendment filed 3/7/2005.
2. Claims 1-9, 12-19 are pending in the case.

### *Response to Arguments*

3. Applicants' arguments with respect to claim rejections have been fully considered, but they are not persuasive.

#### 3.1. Rejection under 35 U.S.C. 112:

due

Rejection under section 112 is withdrawn due to amendments by the applicant.

6/9

#### 3.2. Rejection under 35 U.S.C. 102:

Applicant argues Ziai, the cited prior art, does not teach or suggest each and every limitation of claim 1. In particular, applicant argues Ziai does not teach: "a shared input buffer associated a plurality of input ports." However, as indicated in the first office

Art Unit: 2132

action, Ziai's item 403 teaches the said limitation. As shown in Fig. 4 and associated text, item 403 is clearly an input buffer. As shown in col. 7 lines 24-39, this buffer is a queue that packets waiting to be sent to the IPsec decryption accelerator are stored. Therefore all IP packets are headed for this buffer. As indicated in col. 4 lines 47-67 and/or col. 1 lines 48-60, Ziai's system works with both TCP and UDP protocol, as well as other transport protocols. TCP and UDP both run on top of the IP protocol, and have different ports. Therefore, the 403 buffer is shared as a packet queue for at least both the TCP and UDP packets. Therefore, item 403 is a shared input buffer associated a plurality of input ports.

Applicant further argues: Ziai does not teach: "a security association lookup unit configured to identify a security association address in a first portion of the address space associated with the cryptography accelerator by using header information, the first portion of the address space corresponding to bus controller memory." However, item 308 is a Security Policy Database (SPD), and item 309 is a Security Association Database (SAD), which as described in the cited column 6, lines 17-43, determines the security policies associated with the received packet. The policy is looked up based on a reference provided by the SPD. As shown in col. 6 lines 4-17, the SPD is indexed according to packet header information. Therefore, the SPD and SAD lookup a security association for the packet based on the packet header information. To lookup data within a database, the address of the data must be identified. The SAD and SPD are associated with the decryption accelerator (cryptography accelerator), as shown in Fig. 4. Therefore, the identified security

Art Unit: 2132

association is found in the address space associated with the cryptography accelerator.

Also, Fig. 4 shows that the SAD, SPD and decryption accelerator are associated with the Direct Memory Access (DMA) Controller, item 410, which control and facilitates access to memory. Therefore, Ziai teaches a security association lookup unit configured to identify a security association address in a first portion of the address space associated with the cryptography accelerator by using header information, the first portion of the address space corresponding to bus controller memory.

Based on the discussion above, applicant's argument relative to allowability of claims 1-9 is found non persuasive.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-9, 12-19 are rejected under 35 U.S.C. 102(e) as being anticipated by Ziai (US Patent No. 7,017,042, filed June 14, 2001).

5.1. As per claim 1, Ziai is directed to a cryptography accelerator (abstract, or items 402 or 411 in Fig. 4), comprising: an input port configured to receive a data sequence comprising header information and payload information from an entity external to the cryptography accelerator (Fig. 4, items 401 or 412 and associated text describe a network interface which receives/sends data packets from/to the network); a shared input buffer associated with a plurality of input ports, the shared input buffer configured to hold payload information associated with the data received by the plurality of input ports (Fig. 4, items 403 or 419 and associated text); and a security association lookup unit configured to identify a security association address in a first portion of the address space associated with the cryptography accelerator by using header information (col. 6, line 17-43), the first portion of the address space corresponding to bus controller memory wherein the security association lookup unit is operable to acquire the security association information from bus controller memory (the security association information is obtained from the IPSEC security association data base (item 420, Fig. 4), which works with the cryptographic accelerator (item 402 or 411) and is associated with the DMA controller. DMA controller takes control of the bus and memory for data transfer between devices).

5.2. As per claim 2, Ziai is directed to the cryptography accelerator of claim 1, wherein the security association lookup unit identifies the security association address using header information associated with the received data sequence (col. 6, line 4-10).

5.3. As per claim 3, Ziai is directed to the cryptography accelerator of claim 2, wherein the security association lookup unit identifies the security association address by performing a hash on the header information (see response to claim 2, and note that hashing to create an index to identify the address of data located in memory was a standard and widely used procedure in database systems at the time of invention).

5.4. As per claim 4, Ziai is directed to the cryptography accelerator of claim 2, wherein the security association lookup unit identifies the security association address by performing a hash using a source address, a destination address, a SPI, a source port number, and a destination port number (see response to claim 2 and col. 6, lines 4-10).

5.5. As per claim 5, Ziai is directed to the cryptography accelerator of claim 4, wherein the hash further uses protocol information and a version number (per col. 6, line 4-10, the information used to determine the security association address is IP addresses. Therefore, the protocol data (IP) and its version (IP version 4 and IP version 6 have different addressing scheme) are part of information).

5.6. As per claim 6, Ziai is directed to the cryptography accelerator of claim 1, wherein the first portion of the address space is a HyperTransport address space

Art Unit: 2132

(HyperTransport links connect devices in ICs. Item 415 in Fig. 4 is a link between IC devices, and is separate from the system bus (col. 7, line 65-70).

5.7. As per claim 7, Ziai is directed to the cryptography accelerator of claim 1, wherein the first portion of the address space is a Peripheral Components Interface (PCI) address space (Fig. 4 item 405 is a peripheral memory, with a peripheral address space).

5.8. As per claim 8, Ziai is directed to the cryptography accelerator of claim 7, wherein a second portion of the address space corresponds to a system memory address space, the random access memory coupled to a CPU external to the cryptography accelerator (Fig. 3A item 307 and associated text, which is a memory separate from the accelerator memory space).

5.9. As per claim 9, Ziai is directed to the cryptography accelerator of claim 8, wherein a third portion of the address space corresponds to on-chip memory (col. 4, line 62-66).

5.10. Claims 10 and 11 were cancelled by the applicant.

5.11. Limitations of claims 12-19 are substantially the same as limitations of claims 1-9 above, and noting that Ziai teaches processing the second packet without waiting for



the result of the read request for the first packet. This is taught by Ziai in col. Line 1-3, where it is determined if the packet requires IPsec processing. Per col. 6 lines 4-16, packets that do not require IPsec processing may bypass the decryption process performed by the accelerator, and therefore be processed without waiting for result of the packets in front of it that require IPsec processing and decryption. Ziai also teaches plurality of cryptographic processing data paths as required by claim 13. As shown in col. 6 lines 17 to col. 7 line 24, packets go through different paths based on their security policy needs. For example, packets with ESP mode have different processing requirements than those with AH protocol. Note that the purpose of Ziai's invention is to free up system resources from having to wait for the results, or perform the cryptographic process requirements, by deploying additional cryptographic accelerators.

### ***Conclusion***

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

Art Unit: 2132

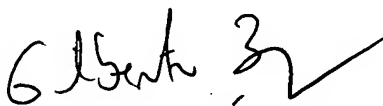
extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Farid Homayounmehr whose telephone number is (571) 272-3739. The examiner can be normally reached on 9 hrs Mon-Fri, off Monday biweekly.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gilberto Barron can be reached on (571) 272-3799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**Farid Homayounmehr**

**5/14/2007**

  
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